

Grid-Tied Inverter

User Manual

Models: 3000 Watt



Included

- 1 x 3Kw GRID TIED Inverter
- 2 x MC4 Connector Sets
- 4 x White 2-Way Expansion Plugs
- 4 x Co-Axial Screws
- 4 x Flat Washers
- 2 x Stainless Steel Bolts M5
- 2 x Stainless Steel Bolts M6
- 1 x Installation Bracket
- 1 x Installation Manual
- 1 x Sealing Plug Sets
- 1 x AC Power Connector



**GRID TIED
INVERTER**



**ACCESSORIES
INCLUDED**

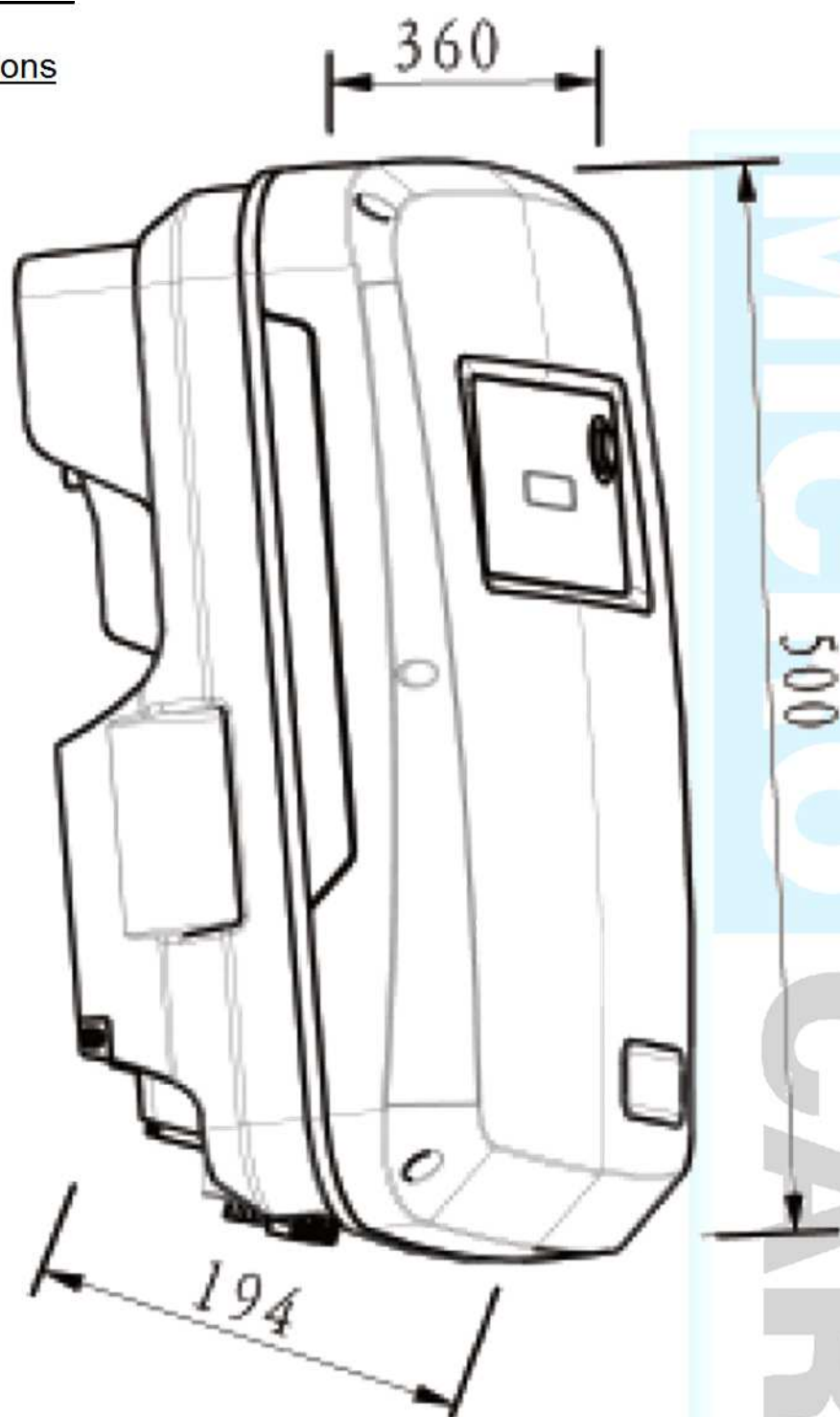


SEALING PLUGS

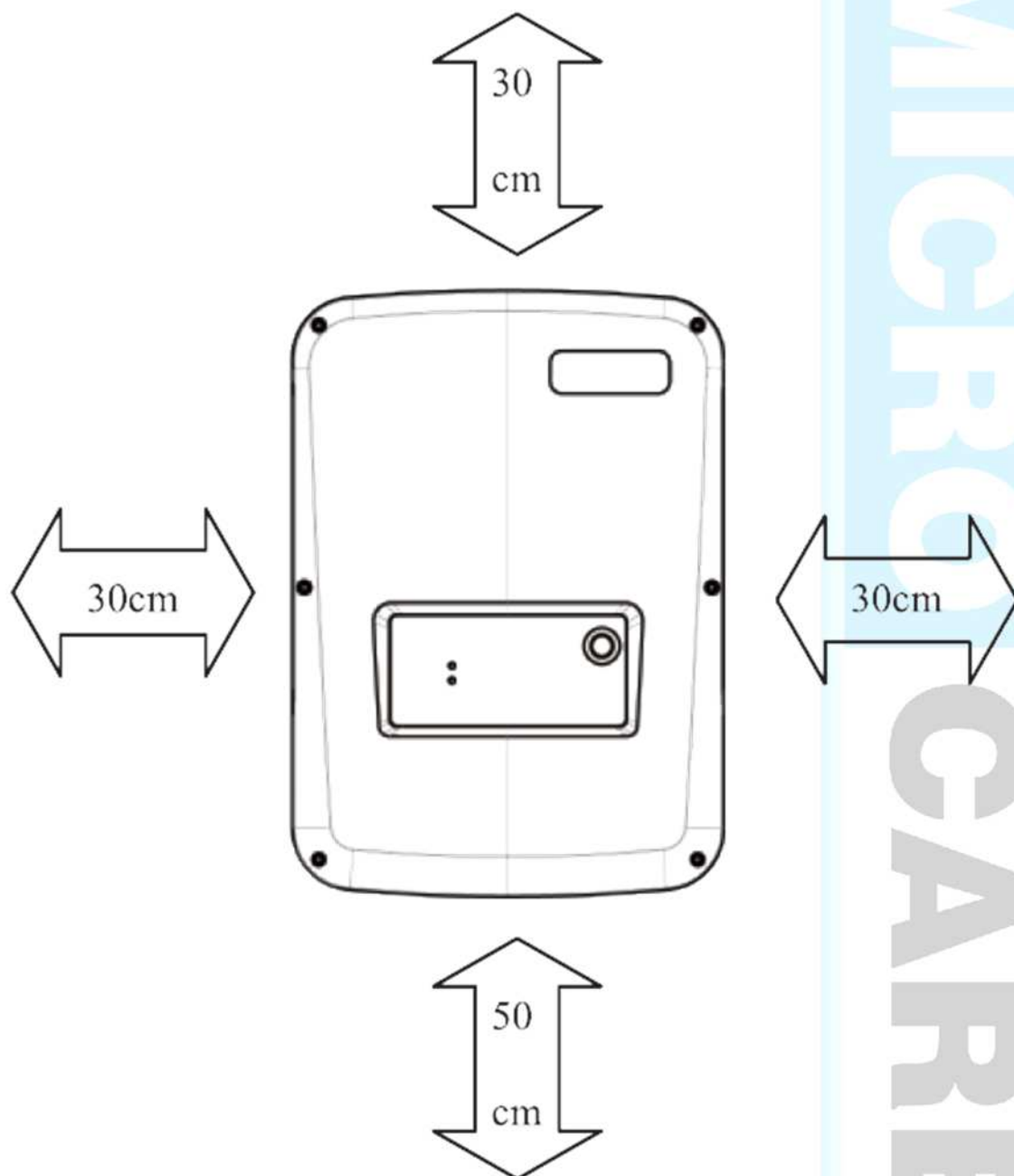


Installation

Dimensions



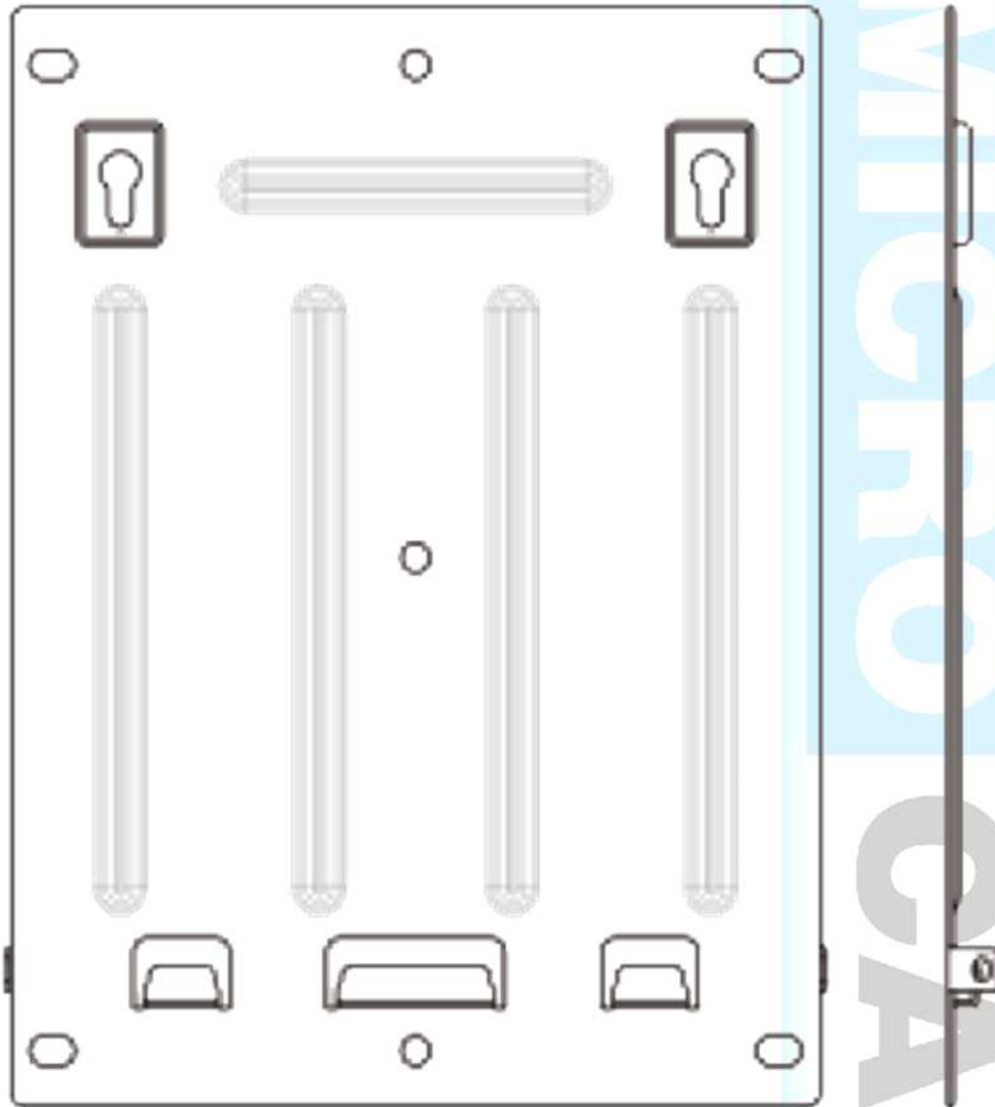
Height	360 mm
Width	500 mm
Depth	194 mm
Weight	18.4 kg



Mounting Position

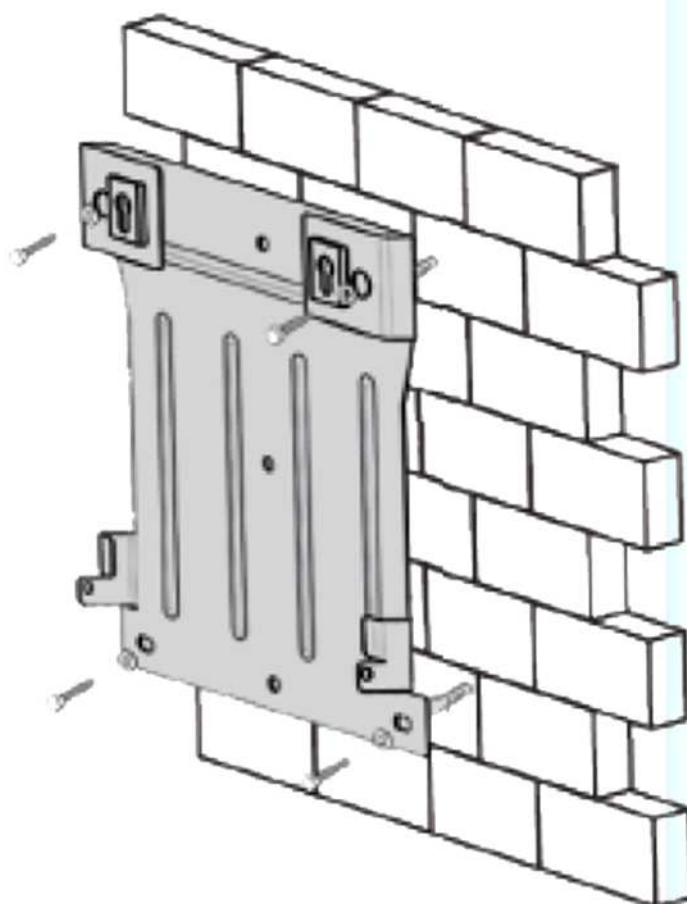
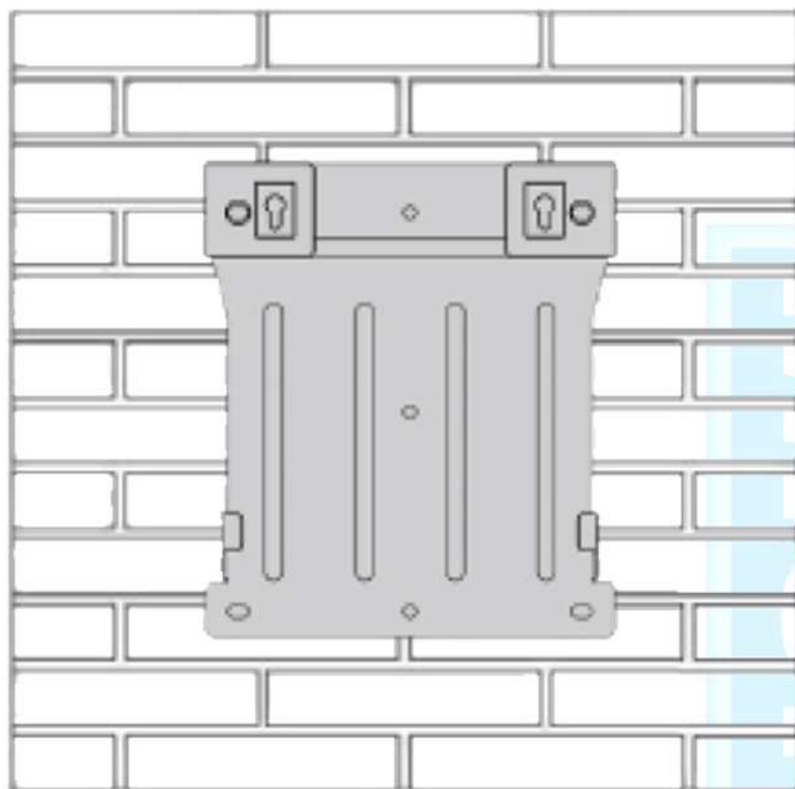
- Choose a surface that can support the inverter's weight (ex. Concrete or steel surface.)
- Installation must be easily accessible for installation, connection of electrics and maintenance.
- For optimal heat dissipation and airflow the inverter should be mounted to a vertical surface with the power terminals on the bottom.

- When multiple inverters are connected in parallel the ambient temperature may be higher than desired. To ensure normal operation increase clearances between inverters and/or substitute an external cold air supply.
- Do not install the inverter in a sealed enclosure to insure proper ventilation.



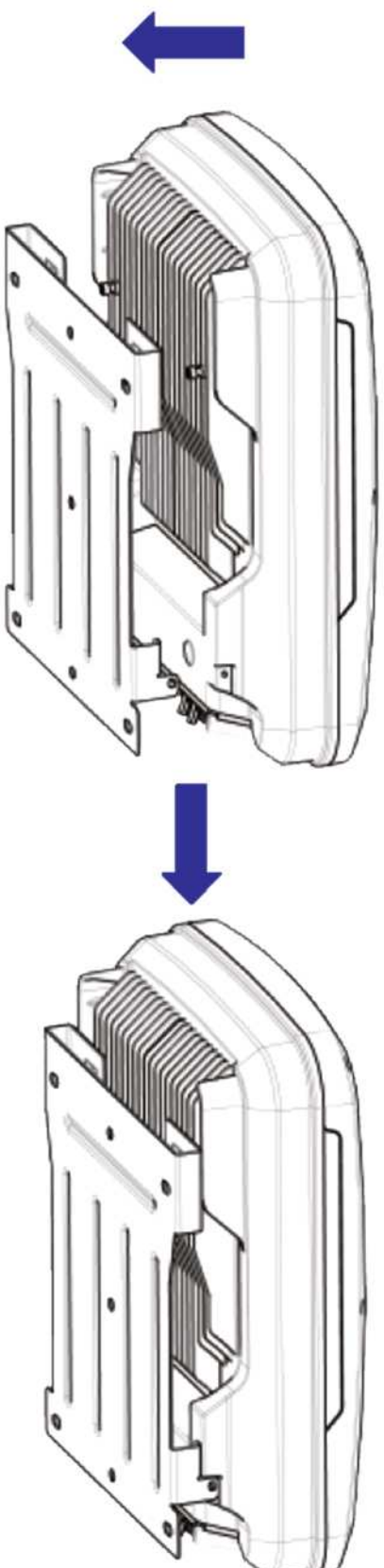
Mounting Bracket

- When using the mounting bracket it is important to select a vertical surface that will be able to take the weight of the inverter.
- After a suitable position has been selected drill 8mm wide 40-45mm deep holes using the mounting plate as a template.
- After the holes have been drilled ,place expansion rubber stoppers into the holes
- Now place the mounting bracket onto the surface matching up the holes in the bracket to the stoppers.
- Use the 7 mounting screws to securely fasten the mounting bracket to the surface.



- Insert the protruding plaits on the mounting bracket into the rectangular notches on the back of the inverter.
- Slowly pull the inverter vertically downwards until the inverter's bottom plate touches the mounting bracket's bottom.
- Fix the inverter to the mounting bracket by screwing it to the bracket.

MICRO CARE



System connection diagram

A: Solar panel

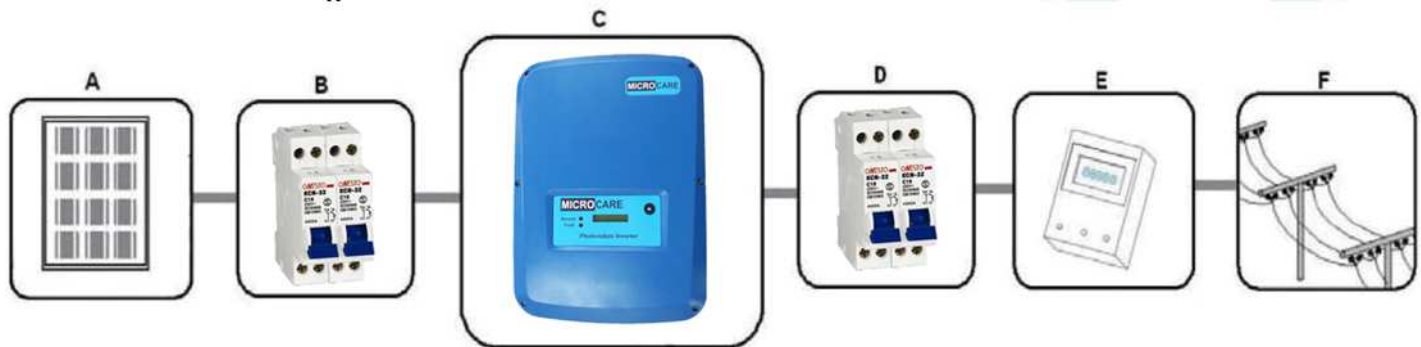
B: DC circuit breaker

C: Grid tie inverter

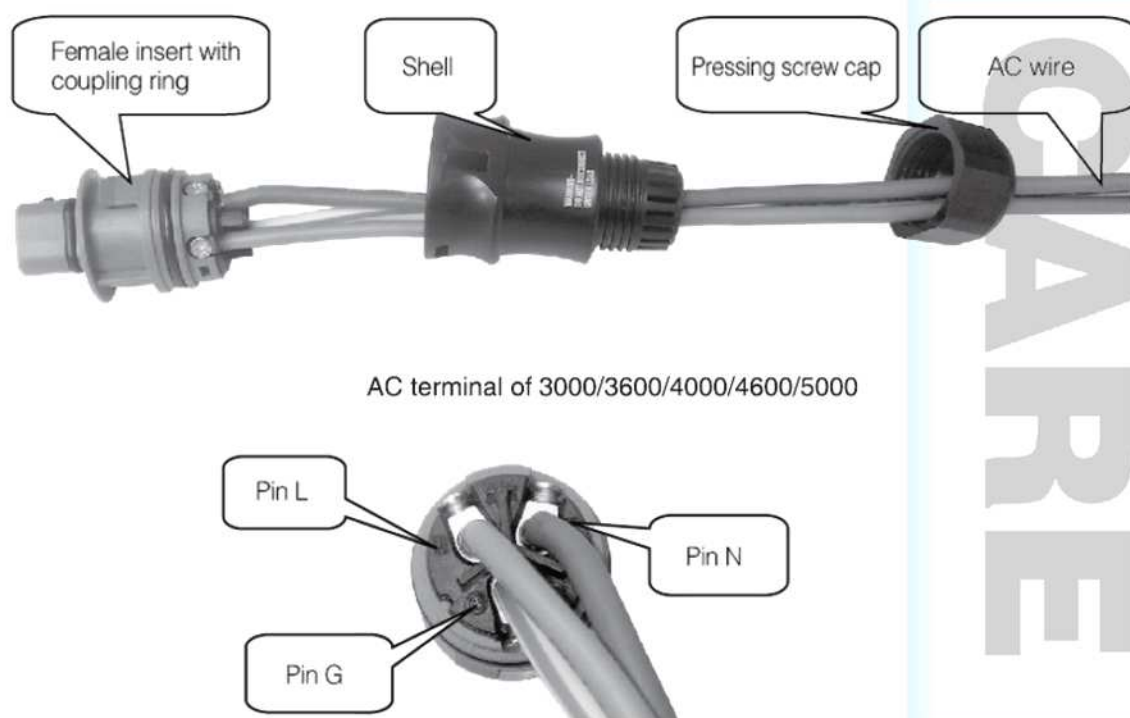
D: AC circuit breaker

E: Electricity meter

F: Power grid



AC Connection Terminals



DC Connection Specifications

Model	Max input current	Max input voltage
1500	9 A	450 V
2000	10 A	500 V
2500	13 A	500 V
3000	13 A	500 V
3600	18 A	550 V
4000	19 A	550 V
4600	18 A	550 V
5000	18 A	550 V

Operation

Start-up checks

- Check that the solar panel's operation specifications are within the inverters safe operation range.
- Check that the inverter's operation specifications are within the local grid regulations.
- Check that the inverter is securely mounted.
- Check that the DC terminals and solar panels are correctly connected.
- Check that the AC terminal and grid connections are correctly connected.
- Check that the AC and DC circuit breakers are correctly connected.
- Check that the inverter cover is securely tightened and sealed.

Display

The state of the inverter is displayed on the first line of the display. The Microcare Grid tie inverter operates in the following four states:

- Standby: The inverter is standing by to be initialised.
- Waiting: The inverter is waiting for the grid to be connected.
- Normal operation: The inverter is operating normally.
- Fault state: The inverter has detected a fault.

The button on the front of the inverter can be used to scroll through the info displayed on the second line. Alternately it will automatically scroll through the info after no input from the user for about 20 seconds.

Displayed on the second line	
Displayed info	Details
User: xxxx	Displays the user type for the inverter
Spec: xxxx	Displays the spec the inverter is running at (Default VDE)
Model: x.xKw	Displays the model number of the inverter (1500, 3000, 5000)
SW Version: XX.XX	Displays the current software version installed (5.06)
Etota: XXXKwh	Displays the total amount of power the inverter has produced
Etoday: XX.XKwh	Displays the amount of power the inverter has produced today
Ttoday: XXhxxmin	Displays the time the inverter has been operating today
PV: xxxV BUS: xxxV	PV: Displays the solar panel voltage BUS: Displays the voltage on the MPPT BUS
AC: xxxV xx.xhz	AC: Displays the voltage of the grid Hz: Displays the frequency the grid is operating at.
SN: xxxxxxxxxxxxxxxxx	SN: Displays the serial number of the inverter

Fault states	
Displayed fault	Details
Disconnect Grid	The inverter is not connected to the grid.
Grid V Fault	The grid voltage is out of range.
Grid F Fault	The grid frequency is out of range
Low Isolation	The input isolation is too low.
High PV Voltage	PV input voltage to high
High Ground 1	The ground fault circuit interrupter has tripped.
High Temperature	The inverter is in thermal shutdown and will resume when cool down.
EEPROM Damaged	The inverters memory has been damage and the long may be lost.
Please Initiate	System has not been initiated and need programming
GFCI Damaged	The inverters ground fault circuit interrupter is damaged.
Sensor Damaged	The inverters output ac sensor is damaged
SCI Damaged	The inverters processors are not communicating correctly
Not Consistent	The inverters processors data are conflicting.
High DC INJ	The output of the DC MPPT is too high.
Relay Damaged	The inverters relay is faulty.
High Bus Voltage	The DC Bus voltage is too high.
Auto test failed	The inverter has failed its auto test and has an internal fault.
2.5V Ref fault	There is a problem with the 2.5v Reference on the processor board.

Specifications	3000 Watt
Input data	
Max.DC power	3160W
Max.DC voltage	500V
Recommended system voltage	383V
System start-up voltage	150V
PV voltage range MPPT	110V-480V
Full load voltage range MPPT	250V-400V
Max.input current	13A
DC voltage ripple	< 5%
Output data	
Nominal AC output	2800W
Max.AC power	3000W
Max.output current	16A
THD of AC current	< 3%
Norminal grid voltage	220V/230V/240V
Norminal grid frequency	50Hz
Power factor (cos ϕ)	0.99
Number of feed-in phases	single-phase
Efficiency	
Max.efficiency	96.60%
MPPT efficiency	99.50%
Device protection	
Reverse polarity protection	short-circuit diode
DC switch	Yes
Short-circuit proof	Yes
Ground fault monitoring	Yes
Grid monitoring	Yes
Over-voltage protection	Yes
Over-current protection	Yes
Active anti-islanding	Yes
Ground fault current detection	Yes
General data	
Dimensions (height x width x depth)	360/500/194
Weight	18.4kg
Noise level	<30 dB
Power consumption night	< 0.2W
Power consumption standby	5W
Cooling	free convection
Features	
On/off mode	Auto
Display	LCD/LED
Accessory interfaces	RS485/RS232

J&J ELECTRONICS LIMITED CARRY-IN WARRANTY

GRID TIED INVERTERS

J&J Electronics warrants its Grid Tied Inverters against defects in workmanship and materials, fair wear and tear accepted, for a period of 7 (seven) years from the date of delivery/collection for all equipment and is based on a carry-in basis. Where the installation of the product makes it impractical to carry-in to our workshops, J&J Electronics reserves the right to charge for travel time and kilometres travelled to and from the site where the product is installed.

During this warranty period, J&J Electronics will, at its own discretion, repair or replace the defective product free of charge. This warranty will be considered void if the unit has suffered any physical damage or alteration, either internally or externally, and does not cover damages arising from improper use such as, but not exclusive to:

- Inadequate or incorrect connection of the product and/or of its accessories.
- Mechanical shock or deformation.
- Contact with liquid or oxidation by condensation.
- Use in an inappropriate environment (dust, corrosive vapour, humidity, high temperature, biological infestation.)
- Breakage or damage due to lightning, surges, spikes or other electrical events.
- Connection terminals and screws destroyed or other damage such as overheating due to insufficient tightening of terminals.
- When considering any electronic breakage except due to lightning, reverse polarity, over-voltage, etc. the state of the internal control circuitry determines the warranty.

This warranty will not apply where the product has been misused, neglected, improperly installed, or repaired by anyone else than J&J Electronics or one of its authorised Qualified Service Partners. In order to qualify for the warranty, the product must not be disassembled or modified. Repair or replacement are our sole remedies and J&J Electronics shall not be liable for damages, whether direct, incidental, special, or consequential, even caused by negligence or fault. J&J Electronics owns all parts removed from repaired products. J&J Electronics uses new or re-conditioned parts made by various manufacturers in performing warranty repairs and building replacement products. If J&J Electronics repairs or replaces a part of a product, its warranty term is not extended. Removal of serial nos. may void the warranty.

All remedies and the measure for damages are limited to the above. J&J Electronics shall in no event be liable for consequential, incidental, contingent or special damages, even if having been advised of the probability of such damages. Any and all other warranties expressed or implied arising by law, course of dealing, course of performance, usage of trade or otherwise, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited in duration to a period of 7 (seven) years from the date of purchase.

Life Support Policy:

As a general policy, J&J Electronics does not recommend the use of any of its products in life support applications where failure or malfunction of the J&J Electronics product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness.

J&J Electronics does not recommend the use of any of its products in direct patient care. J&J Electronics will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to J&J Electronics that the risks of injury or damage have been minimised, the customer assumes all such risks, and the Liability of J&J Electronics is adequately protected under the circumstances.

Caution:

Our products are sensitive. While all care is taken by us to dispatch goods with adequate packaging, J&J Electronics is not responsible for any damaged caused to products after they have left our premises. Semi-sealed batteries have to be transported upright and must not be put on their side. Please ensure that your transport company or delivery team is aware of the sensitivity of the products they are collecting.

Goods return policy:

The following terms apply to returns of items purchased from J&J Electronics, and we require the following information:

1. Details of the item(s) you would like to return.
2. Our invoice number.
3. The reason for the return.
4. J&J Electronics must be notified within 7 days of your intention to return the goods which were purchased.
5. All items returned will be inspected prior to refund. If our technicians are not immediately available, the goods will have to be left with us until such time as a technician is available to check the items.
6. Proof of purchase is required for all returns.
7. The price paid by the customer is the price on which the refund is based.
8. Items purchased can be returned for a refund, replacement or exchange, provided proof of purchase is provided and subject to all other conditions as set down here.
9. All returns may be subject to an administration and handling fee of 10% of purchase price plus VAT.
10. Returns are based on a carry-in basis.
11. Returns will be refused in the following circumstances:
 - a. Where an item has been tampered with, altered or damaged in any way, or
 - b. Where a return is deemed unreasonable, this will be referred to management.

Severability:

If a part of the terms and conditions set out above is held invalid, void, or unenforceable due to any particular national or international legislation, it shall not affect other parts of the terms and conditions remaining.
